

United States Patent [19]

Brule et al.

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[54] **PHOSPHOPEPTIDES FROM
CASEIN-BASED RAW MATERIAL**

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[*] Notice: The portion of the term of this patent
subsequent to Nov. 30, 1999 has been
disclaimed.

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Related U.S. Application Data

[60] Continuation of Ser. No. 418,600, Sep. 16, 1982, abandoned, which is a division of Ser. No. 229,075, Jan. 21, 1981, abandoned.

[30] Foreign Application Priority Data

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C07K 15/24

[52] U.S. Cl. **530/300; 530/360;**
530/407; 530/832; 424/535

[58] Field of Search 424/95, 535; 530/360,
530/300, 407, 832

[56] References Cited

U.S. PATENT DOCUMENTS

3,974,294 8/1976 Schwille et al. 426/657 X

4,361,587 11/1982 Brule et al. 424/177

OTHER PUBLICATIONS

Chem. Abstracts, vol. 66, 1967, 16570j, Schormueller et al., z.

O'Neill et al, cited in Chem. Abstracts, vol. 75:18606k, 1971.

Hiddink et al, cited in Chem. Abstracts, vol. 89:161719u, 1978.

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[57] ABSTRACT

The method consists in subjecting the raw material (milk or retentate) to enzymatic hydrolysis by means of at least one proteolytic enzyme able to reproduce the proteic digestion occurring in vivo in the human body; recovering the thus obtained hydrolyzate; subjecting the latter to at least one ultrafiltration step on membranes able to retaining the phosphopeptides while letting the peptides pass therethrough, the ultrafiltrate thus containing the non phosphorylated peptides; recovering the ultrafiltration retentate; disaggregating the phosphopeptides in the retentate; and subjecting the latter to at least one further ultrafiltration step on membranes which do not retain the phosphopeptides, these being thus separated from the enzyme and available to be recovered as product. The resulting products are useful as dietetic aliments, therapeutic nutriments or medicaments.

3 Claims, 3 Drawing Sheets